

FEDERAL TRADE COMMISSION

"Tar", Nicotine and Carbon Monoxide Content of Domestic Cigarettes

AGENCY: Federal Trade Commission.

ACTION: Publication of "tar", nicotine and carbon monoxide content of the smoke of 200 varieties of cigarettes.

SUMMARY: The Federal Trade Commission publishes the "tar", nicotine and carbon monoxide content of domestic cigarettes.

FOR FURTHER INFORMATION CONTACT:
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SUPPLEMENTARY INFORMATION: The Federal Trade Commission's Laboratory has determined the "tar" (dry particulate matter), total alkaloid (reported as nicotine) and carbon monoxide content of 200 varieties of cigarettes. The laboratory utilized the Cambridge filter method with the following specifications as set forth in the Commission's announcement of July 31, 1967:

1. Smoke cigarettes to a 23 mm. butt length, or to the length of the filter and overwrap plus 3 mm. if in excess of 23 mm.
2. Base results on a test of approximately 100 cigarettes per brand, or type.
3. Cigarettes to be tested will be selected on a random basis, as opposed to "weight selection".
4. Determine particulate matter on a "dry" basis employing the gas chromatography method published by C. H. Sloan and B. J. Sublett in Tobacco Science 9, page 70, 1985, as modified by F. J. Schultz' and A. W. Spears' report published in Tobacco Vol. 162, No. 24, page 32, dated June 17, 1968, to determine the moisture content.
5. Determine and report the "tar" content after subtracting moisture and alkaloids (as nicotine) from particulate matter.

8. Carbon Monoxide is determined by non-dispersal infrared spectrophotometer.

Concerning the 200 varieties tested, 15 were capable of being smoked to 23 mm. The butt length of the other 185 varieties tested ranged from 24.1 mm. to an average of between 48.6 to 50.0 mm. The butt lengths of 159 of the 200 varieties tested exceed 30 mm.

The samples used were obtained by attempting to purchase two packages of each variety of cigarettes as distributed by domestic cigarette manufacturers during March and April 1981 in each of 50 geographic locations throughout the country. All varieties of cigarettes were not available in each of the 50 geographic locations and in these instances, one or more additional packages of cigarettes were purchased in those geographic locations where respective varieties were available. The sample utilized in the tests were representative of the 200 varieties of cigarettes as available throughout the country at the time of purchase.

A group of cigarette companies has filed a complaint with the Commission alleging that the current cigarette testing methodology does not accurately assess the "tar" and nicotine that Barclay cigarettes deliver relative to the "tar" and nicotine that other cigarette brands deliver. The complainant cigarette companies further allege that Barclay, a 1 mg. cigarette under the current FTC method, delivers more "tar" to the smoker than do other 1 mg. "tar" cigarette brands.

The complainant cigarette companies state that a cigarette manufacturer can reduce the "tar" delivery of a cigarette by a variety of different methods. One way to decrease "tar" delivery involves diluting the cigarette smoke inhaled with air brought into the filter through some form of ventilation. The higher the percentage diluted air inhaled, the lower the "tar" delivery. Methods to increase the amount of ventilation or air dilution vary from brand to brand. Many low

"tar" cigarettes have a filter surrounded by porous paper with one or more rows of ventilating holes encircling the filter. When the filter is puffed, air enters the filter through the ventilation holes where it mixes with the smoke.

In the Barclay filter, air entering the ventilation holes travels to the smoker's mouth through four grooves in the filter. The complainant cigarette companies allege that when consumers smoke Barclay cigarettes, the four grooves either collapse or are in some way blocked. When tested in the FTC laboratory using the current cigarette holder, however, the companies allege that the grooves do not collapse and are not blocked. Thus, it is contended that the Commission's current testing methodology does not accurately measure the relative level of "tar" delivered by Barclay to smokers when compared with other 1 mg. "tar" cigarettes. The Commission is currently investigating these allegations, and has not made a final determination on the merits of this complaint. An asterisk is appended to the test scores included in this report that this investigation may affect.

It also should be noted that cigarette brands which recorded "tar" scores below 0.5 mg., nicotine below 0.05 mg. and carbon monoxide below 0.5 mg. per cigarette in this test are recorded in the accompanying tables as <0.5 mg. "tar," <0.05 mg. nicotine and <0.5 mg. carbon monoxide. The tables do not differentiate between these cigarettes because the current, approved testing methodology is not sensitive enough to differentiate between cigarettes at these levels.

By direction of the Commission.

Carol M. Thomas,
Secretary.

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**TAR¹, NICOTINE² and CARBON MONOXIDE CONTENT
of TWO-HUNDRED (200) VARIETIES of DOMESTIC CIGARETTES**

BRAND	TYPE	TAR (mg/cig)	NICOTINE (mg/cig)	CARBON MONOXIDE (mg/cig)
Alpine	king size, filter, menthol	14	0.9	13
American Lights 120's	120 mm, filter	8	0.7	9
American Lights 120's	120 mm, filter, menthol	8	0.7	8
Arctic Lights	king size, filter, menthol	8	0.8	9
Arctic Lights 100's	100 mm, filter, menthol	7	0.6	9
Barclay ⁴	king size, filter, (hard pack)	1	0.1	1
Barclay ⁴	king size, filter	1	0.2	1
Barclay 100's	100 mm, filter	2	0.3	2
Belair	king size, filter, menthol	8	0.7	9
Belair 100's	100 mm, filter, menthol	8	0.8	10
Benson & Hedges ³	reg. size, filter, (hard pack)	<0.5	0.1	1
Benson & Hedges	king size, filter, (hard pack)	15	1.2	12
Benson & Hedges 100's	100 mm, filter, (hard pack)	16	1.1	16
Benson & Hedges 100's	100 mm, filter, menthol, (hard pack)	16	1.0	15
Benson & Hedges 100's	100 mm, filter	16	1.1	16
Benson & Hedges 100's	100 mm, filter, menthol	16	1.1	17
Benson & Hedges Lights 100's	100 mm, filter, (hard pack)	10	0.7	11
Benson & Hedges Lights 100's	100 mm, filter, menthol, (hard pack)	10	0.7	11
Benson & Hedges Lights 100's	100 mm, filter	10	0.7	13
Benson & Hedges Lights 100's	100 mm, filter, menthol	10	0.7	12
Bull Durham	king size, filter	23	1.9	24
Cambridge ³	king size, filter, (hard pack)	<0.5	<0.05	<0.5
Cambridge ³	king size, filter	<0.5	0.1	1
Cambridge 100's	100 mm, filter	3	0.3	5
Camel	reg. size, non-filter	21	1.4	13
Camel	king size, filter	16	1.2	16
Camel Lights	king size, filter, (hard pack)	6	0.8	7
Camel Lights	king size, filter	8	0.7	10
Camel Lights 100's	100 mm, filter	12	0.9	15
Carlton ³	king size, filter, (hard pack)	<0.5	<0.05	<0.5
Carlton ³	king size, filter	<0.5	0.1	1
Carlton ³	king size, filter, menthol	<0.5	0.1	1
Carlton 100's ³	100 mm, filter, (hard pack)	<0.5	0.1	1
Carlton 100's ³	100 mm, filter, menthol, (hard pack)	<0.5	0.1	1
Carlton 100's	100 mm, filter	4	0.4	6
Carlton 100's	100 mm, filter, menthol	3	0.3	4
Carlton 120's	120 mm, filter	6	0.6	6
Carlton 120's	120 mm, filter, menthol	5	0.5	5
Chesterfield	reg. size, non-filter	21	1.3	13
Chesterfield	king size, non-filter	25	1.7	16
Chesterfield	king size, filter	15	1.0	15
Chesterfield 101	101 mm, filter	15	1.1	16
Decade	king size, filter	5	0.4	4
Decade	king size, filter, menthol	5	0.4	4
Decade 100's	100 mm, filter	8	0.8	7
Doral II	king size, filter	4	0.4	3
Doral II	king size, filter, menthol	4	0.4	3
DuMaurier	king size, filter, (hard pack)	15	1.0	17
English Ovals	reg. size, non-filter, (hard pack)	23	1.7	12
English Ovals	king size, non-filter, (hard pack)	28	2.1	15
Eve 100's	100 mm, filter	15	1.2	14
Eve 100's	100 mm, filter, menthol	15	1.2	14
Eve Lights 120's	120 mm, filter, (hard pack)	14	1.1	13
Eve Lights 120's	120 mm, filter, menthol, (hard pack)	14	1.1	12
Galaxy	king size, filter	14	1.0	13
Golden Lights	king size, filter	7	0.7	8
Golden Lights	king size, filter, menthol	8	0.7	8
Golden Lights 100's	100 mm, filter	8	0.8	9
Golden Lights 100's	100 mm, filter, menthol	7	0.7	7
Half & Half	king size, filter	16	1.3	15

¹ TPM dry (tar)—milligrams total particulate matter less nicotine and water.

² Milligrams total alkaloids reported as nicotine.

³ All scores below 0.5 mg "tar," 0.05 mg nicotine and 0.5 mg carbon monoxide reported as <0.5, <0.05, <0.5, respectively.

⁴ See statement in text concerning Barclay.

BRAND	TYPE	TAR (mg/cig)	NICOTINE (mg/cig)	CARBON MONOXIDE (mg/cig)
Herbert Tareyton	king size, non-filter	27	1.7	19
Hi-Lite 100's	100 mm, filter, (hard pack)	12	0.9	13
Iceberg 100's	100 mm, filter, menthol	2	0.3	4
Kent	king size, filter, (hard pack)	12	1.0	12
Kent	king size, filter	13	1.0	13
Kent III	king size, filter	2	0.3	3
Kent 100's	100 mm, filter	14	1.2	13
Kent 100's	100 mm, filter, menthol	15	1.2	14
Kent III 100's	100 mm, filter	4	0.5	7
Kool	reg. size, non-filter, menthol	19	1.1	14
Kool	king size, filter, menthol, (hard pack)	18	1.2	16
Kool	king size, filter, menthol	16	1.1	17
Kool Milds	king size, filter, menthol	11	0.8	12
Kool Super Lights	king size, filter, menthol	6	0.5	7
Kool Super Longs 100's	100 mm, filter, menthol	14	1.0	16
Kool Milds 100's	100 mm, filter, menthol	12	1.0	13
Kool Super Lights 100's	100 mm, filter, menthol	9	0.7	12
L & M	king size, filter, (hard pack)	15	1.0	14
L & M	king size, filter	14	1.0	15
L & M Lights	king size, filter	8	0.7	7
L & M 100's	100 mm, filter	15	1.1	16
L & M Lights 100's	100 mm, filter	7	0.7	6
L & M Lights 100's	100 mm, filter, menthol	7	0.8	6
Lark	king size, filter	14	1.1	14
Lark Lights	king size, filter	7	0.6	7
Lark 100's	100 mm, filter	18	1.2	15
Lark Lights 100's	100 mm, filter	7	0.6	7
Long Johns 120's	120 mm, filter	18	1.4	18
Long Johns 120's	120 mm, filter, menthol	18	1.3	17
Lucky Strike	reg. size, non-filter	24	1.5	17
Lucky Ten	king size, filter	8	0.6	9
Lucky 100's	100 mm, filter	3	0.3	4
Marlboro	king size, filter, (hard pack)	18	1.0	14
Marlboro	king size, filter, menthol, (hard pack)	15	0.9	14
Marlboro	king size, filter	16	1.0	15
Marlboro	king size, filter, menthol	14	0.9	14
Marlboro Lights	king size, filter, (hard pack)	10	0.7	12
Marlboro Lights	king size, filter	11	0.7	12
Marlboro 100's	100 mm, filter, (hard pack)	16	1.1	16
Marlboro 100's	100 mm, filter	16	1.1	16
Marlboro Lights 100's	100 mm, filter	10	0.7	12
Max 120's	120 mm, filter	19	1.6	18
Max 120's	120 mm, filter, menthol	19	1.6	18
Merit	king size, filter	7	0.5	10
Merit	king size, filter, menthol	7	0.5	10
Merit Ultra Lights	king size, filter	3	0.3	4
Merit Ultra Lights	king size, filter, menthol	3	0.3	4
Merit 100's	100 mm, filter	10	0.7	12
Merit 100's	100 mm, filter, menthol	9	0.7	11
Montclair	king size, filter	14	1.0	16
More 120's	120 mm, filter	18	1.4	20
More 120's	120 mm, filter, menthol	18	1.5	20
Multifilter	king size, filter	12	0.8	11
Multifilter	king size, filter, menthol	12	0.8	11
Newport	king size, filter, menthol, (hard pack)	16	1.2	16
Newport	king size, filter, menthol	17	1.3	18
Newport Lights	king size, filter, menthol, (hard pack)	8	0.7	10
Newport Lights	king size, filter, menthol	8	0.8	10
Newport 100's	100 mm, filter, menthol	20	1.6	20
Now ^a	king size, filter, (hard pack)	<0.5	0.1	<0.5
Now	king size, filter	2	0.2	3
Now	king size, filter, menthol	2	0.2	3
Now 100's ^a	100 mm, filter, (hard pack)	<0.5	<0.05	<0.5
Now 100's	100 mm, filter	1	0.2	1
Now 100's	100 mm, filter, menthol	1	0.2	1

^a All scores below 0.5 mg. "tar," 0.05 mg. nicotine and 0.5 mg. carbon monoxide reported as <0.5, <0.05, <0.5, respectively.

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BRAND	TYPE	TAR (mg/cig)	NICOTINE (mg/cig)	CARBON MONOXIDE (mg/cig)
Oasis	king size, filter, menthol	15	1.0	15
Old Gold Straights	king size, non-filter	28	1.8	17
Old Gold Filters	king size, filter	17	1.3	19
Old Gold Lights	king size, filter	10	0.9	10
Old Gold Filters	100 mm, filter	20	1.5	20
Pall Mall	king size, non-filter	24	1.5	17
Pall Mall	king size, filter	18	1.2	18
Pall Mall Extra Lights	king size, filter	8	0.5	8
Pall Mall 100's	100 mm, filter	17	1.3	17
Pall Mall Lights 100's	100 mm, filter	9	0.8	9
Pall Mall Lights 100's	100 mm, filter, menthol	12	1.1	12
Parliament Lights	king size, filter, (hard pack)	9	0.8	10
Parliament Lights	king size, filter	9	0.8	10
Parliament Lights 100's	100 mm, filter	12	0.9	11
Philip Morris	reg. size, non-filter	21	1.4	12
Philip Morris Commander	king size, non-filter	27	1.7	15
Philip Morris International 100's	100 mm, filter, (hard pack)	16	1.1	16
Philip Morris International 100's	100 mm, filter, menthol, (hard pack)	16	1.0	15
Picayune	reg. size, non-filter	19	1.4	15
Players	reg. size, non-filter, (hard pack)	24	1.9	14
Raleigh	king size, non-filter	22	1.3	17
Raleigh	king size, filter	15	1.0	17
Raleigh Lights	king size, filter	8	0.7	11
Raleigh 100's	100 mm, filter	16	1.1	17
Raleigh Lights 100's	100 mm, filter	9	0.8	13
St. Moritz 100's	100 mm, filter	14	1.1	13
St. Moritz 100's	100 mm, filter, menthol	14	1.4	14
Salem	king size, filter, menthol	14	1.1	14
Salem Lights	king size, filter, menthol	8	0.6	10
Salem Ultra	king size, filter, menthol	3	0.4	4
Salem 100's	100 mm, filter, menthol	15	1.1	14
Salem Lights 100's	100 mm, filter, menthol	9	0.8	11
Salem Ultra 100's	100 mm, filter, menthol	4	0.4	5
Saratoga 120's	120 mm, filter, (hard pack)	15	1.0	16
Saratoga 120's	120 mm, filter, menthol, (hard pack)	15	1.0	16
Silva Thins 100's	100 mm, filter	11	1.0	9
Silva Thins 100's	100 mm, filter, menthol	11	1.0	9
Spring 100's	100 mm, filter, menthol	19	1.1	18
Tall 120's	120 mm, filter	17	1.4	19
Tall 120's	120 mm, filter, menthol	16	1.4	17
Tareyton	king size, filter	14	1.0	15
Tareyton Lights	king size, filter	5	0.4	5
Tareyton Ultra Low Tar	king size, filter, menthol	1	0.1	1
Tareyton 100's	100 mm, filter	14	1.1	16
Tareyton Long Lights 100's	100 mm, filter	7	0.6	7
Triumph	king size, filter	3	0.4	3
Triumph	king size, filter, menthol	2	0.3	3
Triumph 100's	100 mm, filter	4	0.5	6
Triumph 100's	100 mm, filter, menthol	4	0.5	5
True	king size, filter	4	0.4	5
True	king size, filter, menthol	4	0.4	5
True Ultra One	king size, filter	1	0.2	1
True 100's	100 mm, filter	7	0.6	9
True 100's	100 mm, filter, menthol	8	0.6	9
Vantage	king size, filter	9	0.7	13
Vantage	king size, filter, menthol	10	0.7	14
Vantage Ultra Lights	king size, filter	8	0.5	9
Vantage 100's	100 mm, filter	8	0.7	12
Vantage Ultra Lights 100's	100 mm, filter	5	0.5	8
Viceroy	king size, filter	15	1.0	16
Viceroy Rich Lights	king size, filter	8	0.7	10
Viceroy Super Longs 100's	100 mm, filter	15	1.1	16
Viceroy Rich Lights 100's	100 mm, filter	9	0.8	12
Virginia Slims 100's	100 mm, filter	15	1.0	15

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BRAND	TYPE	TAR (mg/cig)	NICOTINE (mg/cig)	CARBON MONOXIDE (mg/cig)
Virginia Slims 100's	100 mm, filter, menthol	15	1.0	14
Virginia Slims Lights 100's	100 mm, filter, (hard pack)	7	0.6	8
Virginia Slims Lights 100's	100 mm, filter, menthol, (hard pack)	7	0.8	8
Winston	king size, filter, (hard pack)	16	1.1	15
Winston	king size, filter	15	1.1	16
Winston Lights	king size, filter	11	0.9	11
Winston Ultra	king size, filter	4	0.4	5
Winston 100's	100 mm, filter	14	1.0	14
Winston Lights 100's	100 mm, filter	12	0.9	14
Winston Ultra 100's	100 mm, filter	5	0.5	7
Winston International 100's	100 mm, filter, (hard pack)	18	1.4	16

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